



The Arboretum Bulletin

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In Memoriam

ALL OF US were saddened to learn of the death, on April 23, 1941, of Mr. James Frederick Dawson, the much beloved and renowned landscape architect who for years was associated with Olmsted Brothers of Brookline, Massachusetts. Landscape architecture in the Northwest owes a debt of gratitude to Mr. Dawson. The University of Washington Arboretum and the detailed plan of Azalea Way in the Arboretum were but two of his most recent contributions to effective planting design here in the Northwest and it is hoped that they will stand forever as evidence of the man's profundity and genius. Older residents of Seattle will recall the active part that Mr. Dawson played in developing the Alaska-Yukon-Pacific Exposition on the grounds now occupied by the University of Washington. Later there came other important assignments in the Northwest, all of them handled with the characteristic foresight and ability which was so much a mark of his work. The Seattle park system, with beautiful Volunteer Park as its principal feature, sprang from his versatile mind. Latterly there have been other masterful accomplishments on numerous private grounds in and around Seattle, each one bearing prominently the seal of his fertile thought. Yes, we owe much that is good and much that is beautiful to James Frederick Dawson. It is with extreme regret that we record his passing.

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Lilies for the Puget Sound Area

By GORDON EDWARDS

THE PUGET SOUND region is probably better adapted for growing more species of lilies than any other area in the United States. Our cool, maritime climate seems to suit many of the Asiatic and European species and varieties and nearly all the American kinds. The soil on the western slope of the Cascade mountains is more or less acid and the majority of lilies require this condition. There is plenty of native peat available, which, under ordinary garden conditions can be cheaply incorporated into the soil. It helps both sandy and clay soils.

Lilies are true "aristocrats of the garden," to use an expression of Mr. E. H. Wilson who discovered the Regal lily which has given such an impetus to lily growing. They do well where rhododendrons and azaleas thrive, and make splendid companions for these beautiful shrubs, extending the flowering period of a rhododendron border till heavy frosts. The majority are perfectly hardy, and will "stay put" for several years. The following are some of the best kinds for Seattle and vicinity. They should all be planted in October with the exception of candidum which should be planted in August or not later than September, and formosanum which flowers so late it is not ripe till November.

Lilium regale heads the list for ease of culture, popular-

ity, cheapness, perfume and adaptability. It flowers early in July, is white with a yellow throat and pinkish bronze on the outside of the petals. It grows from 4 to 6 feet high and should be planted in full sun. Sulphur-gale hybrids make a good companion crop as they flower about two weeks later. These are the result of a cross between sulphureum and regale and resemble the latter lily. Being a hybrid, they vary.

L. umbellatum is very popular here and will stand lots of abuse. The variety *grandiflorum* is the most common kind, and is orange-red but there are quite a number of other colors from yellow to mahogany. They grow about 3 feet high. *L. davuricum* and *elegans* and its varieties can be classed with *umbellatum* but they are shorter in habit. They all have cup-shaped flowers and will thrive in partial shade. The majority flower in June.

L. Henryi is another lily that does well in partial shade. In full sun the orange colored flowers will fade in a few days. It grows from 6 to 8 feet high with a loose, graceful habit and is sometimes called the orange speciosum.

The well-known tiger lily, *L. tigrinum*, is a great favorite here. In fact, it gets to be a weed as the numerous bulbils which form in the axils of the leaves fall to the ground and grow. It has a stiff, upright habit and will grow to 6 feet.

L. Henryi and *L. tigrinum* flower in August.

L. tenuifolium, the coral lily, is very easily grown from seed, in fact—has to be, as it cannot be propagated by any other method and seeds should be sown every other year to give a succession of bloom since as the bulbs do not last very long. The coral red flowers are rather small but freely borne on thin, wiry stems, in June, 2 to 3 feet high and, as the bulbs are small, they should not be planted over 4 inches deep.

L. amabile resembles the coral lily but it is not so well known. The flowers are larger, and the foliage heavier. It persists much longer in the garden and could be called an improved or larger *tenuifolium*. As the last two lilies are natives of Siberia and Korea, they are perfectly hardy in less favored climes than ours. They both require full sun here.

L. Willmottiae is a tall, very floriferous, orange Turk's cap lily. It will have as many as 50 flowers on a spike and then requires a stake to help support the weight. It flowers in August and will stand some shade.

L. formosanum was introduced to the public as *philipinense* *formosanum*, the Philippine lily, but as there are at least three forms in cultivation, flowering respectively in August, September and October, the botanists have classified the late flowering one, *formosanum*. It is the best form to use here. It has white, trumpet shaped, sweet-scented flowers marked with purplish brown on the outside of the petals and will reach 8 feet. It seldom has more than five flowers on a spike, but they are quite large.

There are several forms of *L. speciosum* in commerce but

rubrum and album thrive best in this district. Rubrum is pink with white at the edge of the petals and with many raised red spots. Florists use this lily extensively and it ranks with the more difficult-to-grow auratum in beauty. Out of doors it flowers in August and September and stays in flower a long time. It grows about 4 feet tall, will stand some shade, and should be in every collection.

L. pardalinum, the leopard lily, is the easiest Californian to grow here. It requires full sun and plenty of water. The flowers are orange, deepening to red on the outer half of the petals which are heavily spotted. There is a form in commerce called the Sunset Lily, which has larger and darker flowers and a stiff, erect habit but it is not as graceful as the type. They both flower in July.

L. giganteum himalaicum is not well known but, since it has proven itself here, should be mentioned. It must have shade and will grow 8 feet high. The flowers are white and larger than any other lily, under ideal conditions will be 12 inches long. The bulbs must be planted with the neck flush with the ground and the leaves are heart shaped. After flowering, the bulb dies but leaves several smaller bulbs which will flower in 3 or 4 years.

L. Hansoni is another shade lover but will stand more sun than the last mentioned lily. The flowers are yellow and the petals very thick. It grows about 4 feet high and flowers in June.

It seems a shame to put the lovely, sweet-scented Madonna lily, *L. candidum*, so far down a list of desirable lilies but it sometimes suffers from botrytis, a fungous disease, which fortunately is easily controlled by spraying with Bordeaux mixture when the spots first appear. The bulbs should be planted early in September as this is the only lily that has foliage during the winter and they should not be planted over two inches deep or in the shade.

All these lilies should be planted from six to eight inches deep with the exceptions mentioned. They all like lots of humus, well minced with the soil but no fresh manure and the soil must be well drained.

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The Orchid Project

THE TERRESTRIAL orchids of the temperate zone comprise an interesting, beautiful group of plants. The ladyslippers or moccasin flowers are typical, although there are many other genera and species which have true garden value in the Northwest. Many of them are so beautiful and relatively delicate that they are being lost from their native habitats, exterminated by indiscriminate picking, by the cutting of the trees which protected them and by forest fires. As an aid to offsetting their complete depletion the Arboretum has begun a series of experiments from which it is hoped will come definite information on certain phases of their culture, particularly seed germination and early growth of the seedlings. We are happy to announce that Mrs. Alexander F. McEwan, who has long been interested in projects of this kind, has undertaken sponsorship during the current season by providing funds which will enable us to proceed much more rapidly toward our goal.

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Portulaca

M R. PERRY TRAUX, one of our leading gardeners, takes exception to a note that appeared in last month's bulletin in which it was stated that portulacas were difficult to transplant and that the seed should therefore be sown where the plants are wanted. He maintains that they can be transplanted with ease and says that he has often done it without losing a plant.

Sow Wallflowers Soon for Next Year's Display

By W. H. WARREN
Superintendent of Parks, Victoria, B. C.

MAY 15th to June 15th is the time when the best growers of wallflowers in Victoria sow their seed. If sown before this period, they may become too large and snappy to withstand the winter. If sown later one is taking a chance on having undersized plants.

Although seed is available grown in Canada and the U. S. A., most good gardeners will agree that the best source is England where wallflower growing has been a specialty for generations.

Some gardeners with the proverbial green thumb have no difficulty in obtaining a nice display of wallflowers. Others find them not so easy, particularly if they happen to grow wallflowers in large quantities. The following notes have been gathered from a careful study of conditions in Victoria over a number of years and are written in the hope that they may be helpful to other gardeners.

Wallflowers are lime lovers and authorities claim gardeners seldom overdo the use of lime for wallflowers. Amounts up to four or five pounds of agricultural lime per one hundred square feet are used. The above is one of the cardinal points in growing wallflowers, and is particularly advisable on our soils which are commonly acid. Sow the seed broadcast in medium loam soil in a half shady spot or better still in a frame covered with lath shade. When the plants are about 2 inches high, transplant to their summer quarters in a well limed soil, not too rich in nitrogen, spacing them 8 inches apart in the row. It is important not to let the roots get dry during this operation, as it will give the plant a very serious set-back. Soak the ground thoroughly as soon as they are transplanted.

As soon as the plants have recovered and are making sturdy growth, the growing point should be pinched out of each wallflower. This should cause them to grow into a compact well-branched plant. In the pinching operation be sure you pinch out a portion of the stem and not merely the ends of the leaves, a mistake easily made. This pinching back seems to be more important when the plants are grown in light soil. On heavier soil they make a more compact growth.

Subsequent attention now largely determines the type of plant produced. Leaf spot and mildew will attack the plants during moist periods and must be controlled by spraying with a fungicide. We have found ammoniacal copper carbonate to be very satisfactory. It consists of $\frac{1}{4}$ oz. copper carbonate to 2 oz. concentrated ammonia and $1\frac{1}{4}$ gallons water, to which is added 1 level teaspoon of Agrol, the finest of all spreaders. Mix in a wooden bucket. For aphids, add 1 tablespoon nicotine sulphate.

This spraying should be done regularly at intervals of not more than three weeks until the wallflowers are moved into their permanent beds.

The use of satisfactory fertilizers has been demonstrated to help control disease, particularly "die back." Little nitrogen is required but large amounts of potash and phosphoric acid are advisable. Purchase three pounds of nitrate of soda, twelve pounds superphosphate and six pounds sulphate of potash. Mix together and apply one and one-half pounds as a side dressing to each 100 feet of row. Cultivate the fertilizer into the ground and water thoroughly. The first application may be made about the time the plants are pinched. Repeat again in mid-August.

Wallflowers should be planted in their permanent position before October 15th for best results. Apply three pounds of the above fertilizer to each 100 square feet and dig the mixture into the soil. Apply four pounds agricul-

tural lime to 100 square feet to the surface and rake it in. The bed is now ready for planting. The next two operations are important and need emphasis. Plant the wallflowers firmly and then water thoroughly. Spray once again if thought advisable. Do not use manure in the bed at this time; but delay until spring after the wallflowers are removed. Repeated experience has shown that it requires good plants at planting time to make a good spring show. Small plants never recover sufficiently to make their use worth while. For success with wallflowers we repeat the essentials: sow seed at correct time, use lime, fertilizer and spray as directed and transplant firmly into final bed early in the fall.

Best Wallflower Varieties—Planting Schemes

Of the thirty or more standard sized single varieties of wallflowers, there are less than a dozen favorites. The best are Cloth of Gold, Fire King, which has varying shades of orange red, and is regarded as a tender variety; Scarlet Emperor, Vulcan, scarlet red, and Blood Red. These grow from fifteen to eighteen inches high. Golden Bedder and Orange Bedder are two of the best dwarf types and are twelve to fifteen inches high.

The use of color combinations is largely a matter of taste. For beds of one or two colors the varieties above are ideal. Fire King and Blood Red planted together are excellent. There are many varieties in pastel shades. Planted alone they frequently lack the gaiety of color associated with wallflowers, but used in a mixture they are quite useful. Cloth of Gold, Fire King and Blood Red plus pastel shades such as Giant Ruby, Primrose Monarch and Eastern Queen (a shade of chamois turning to salmon red) will make a good mixture if the pastel shades are allowed to dominate. Such a mixture used in one Victoria garden is the pride of its owner and the joy of all who see it. The plants are spaced 18 inches apart and interplanted with myosotis. Tulips, red, pink or sometimes in a mixture, are interplanted. To get best results so far as color is concerned, beds of the pastel shaded varieties should be flowered in semi-shade.

Following are some of the failures which are most commonly experienced in growing wallflowers. The plants may lack size when ready to plant out in the beds. This may be caused by too late a sowing, lack of care, poor soil or acid soil. Spindly conditions may be caused by excessive shade. When the plants are finally placed in the beds they may stand still and make no growth, caused by improper soil conditions, too late planting, the use of undersized plants or those which have an insufficient root system, or by planting them too loosely. When spring comes many plants may be dead. This may be caused by insufficient drainage. We commonly say the plant has wet feet. Excess nitrogen may cause weak, sappy growth, which would be very susceptible to frost injury, or the final planting may have been too late for the plants to get established. Even under the best of conditions wallflowers may be severely injured by frost, some of the varieties being much more susceptible than others. Some gardeners have had good results by using the hardier dwarf or Tom Thumb strain.

Then there are diseases which affect wallflowers much more seriously than is commonly realized. A leaf spot disease and a white mildew which dwarfs and distorts the foliage eventually killing the plant, are two common diseases, the latter being the more serious. In the spring when the plants are in bud or about to flower they may suddenly wither and die, "die back" being the common name for it. This disease, which is much more common in some varieties than others, was fully reported on in the November, 1938, Journal of the Royal Horticultural Society. These are briefly the pitfalls set to ensnare unwary growers.

Parsons' Seed and Plant Fund

WE ARE HAPPY to report that Mr. Reginald H. Parsons has agreed to sponsor seed and plant collection for another year. This project is a very important one to us, not only because it enables the Arboretum to procure planting stock of desirable native materials but also because it provides seeds of plant species that are in demand at botanic gardens and arboreta in other parts of the world. Thus we are furnished with a means of procuring propagating material of exotic species that would otherwise be difficult to procure. It would be impossible to get any great measure of cooperation from other organizations if we could not reciprocate by supplying them with whatever seeds of our native species they might want.

The Parsons' fund for 1941 will be used to help finance seed and plant collection in several localities. A portion of it will go to Miss Elizabeth E. Fletcher for collecting in the Canadian Rockies. Miss Fletcher will accompany Dr. C. L. Hitchcock's summer botany group into British Columbia, there to stay for nine weeks. Another portion of the fund will go to Mr. Richard Northcraft, a botany major at the University of Washington, who will lead a party of four graduate students into Mexico. The party will be gone most of the summer and it is expected that they will be able to collect many interesting, valuable plant species.

Cercidiphyllum Japonicum

IF I WAS ever forced to choose a single tree species for use in a garden, I would hesitate a long time before striking off my list the name *Cercidiphyllum japonicum*. Some trees are valued for their flowers, some for their fruits and others for their bark characters, or foliage, or hardiness. *C. japonicum* produces neither flowers nor fruits that are of any consequence. It is valued because of this combination of pleasing characters—interesting leaves like those of *cercis*, the redbud, in miniature—a delicateness and grace that is a summation of habit of growth, foliage size and twig size—a fine texture that is particularly apparent in winter when the tree is leafless—a suggestion of aggressive, optimistic movement that arises from the arrangement of the leaves along the slender branchlets, the position they take, the way they are suspended and the ready motion set up among them by even the faintest breeze—and lastly the gorgeousness of the foliage color display as the late summer advances into the fall and winter. Yellow, red and orange colors run riot through the graceful crown, especially if the planting site is chosen in other than a cold, wet, lowland or valley soil. The tree is apparently quite long-lived and never grows to more than 25 or 30 feet tall.

Cornus Controversa

THOSE of you who are interested in rare plants that have ornamental worth would do well to see the beautiful plant of *Cornus controversa* which grows at the west end of Anderson Hall (Forestry building) on the University campus. The tree has been severely crowded by adjacent plants but is quite striking nonetheless. The broad corymbs of white or creamy white flowers are developed to their fullest now. Later there will appear many shiny, dark purple fruits. Unlike the western dogwood there are no large, white bracts around the clusters of true flowers. However, the inflorescences are so big as to be very showy even without the bracts. *C. controversa* also differs from the majority of dogwoods by having an alternate, instead of an opposite, branching arrangement.

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